

Drum Triggers

Drum triggers are quickly becoming quite an attraction in our current world of electronic drum synths, drum machines, MIDI, and the whole hi-tech spectrum. The main function of a drum trigger is to convert a drumhit to a voltage pulse, in order to trigger an outboard sound source. In the case of MIDI, the drumhit can be converted into a MIDI signal to trigger any MIDI sound source. Drum triggers facilitate the blending of acoustic and electronic sounds, in addition to allowing electronic sounds to emanate from your acoustic kit. Drum triggers also give you the option of getting sounds from anything that's strikeable, be it a practice pad, a cowbell, a soda bottle, etc.

The degree of sophistication of your sound module, brain, or drum machine—in terms of factors that can or cannot be compensated for (like sensitivity, threshold, etc.)—will affect trigger placement on acoustic drums. Internal shell placement helps isolate triggers and reduce crosstalk. It's also the better option if you're the type that breaks or changes drumheads often. On the other hand, direct batter-head mounting is especially useful when dynamic control and maximum sensitivity are needed. Other places to mount drum triggers include the drum rim and the drumshell's exterior.

What follows is a review of several different drum triggering devices. For a wider overlook, refer to the December '86 *MD* for my reviews of DW, Shark, and Techtonics trigger pedals, and the January '87 review of Dynacord's *Rhythm Stick*.



BARCUS-BERRY 2050
Barcus-Berry's Model 2050 drum pickup/

trigger consists of a flat 1 1/2" transducer, joined by an 8" cable to a single 1/4" output jack box. The trigger uses foam tape to adhere itself to the drumhead, rim, or shell, while the output jack is *Velcroed*. Another piece of adhesive-backed *Velcro* allows you to mount the output jack box on the side of the drum or in any other convenient location. The 2050 trigger, like many others, also has the capability of performing as a drum mic' pickup for sound reinforcement, or as a sampling mic'.

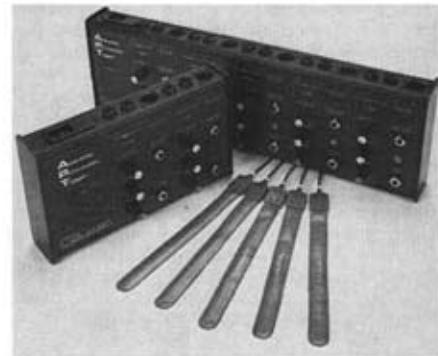
Because of its flat profile, the Barcus-Berry trigger stays out of the way easily. Sensitivity is not hindered at all by the foam tape mount, partly because only the ends of the pickup are adhered with the tape. In general, the 2050 is very "live" and performs excellently, while being quite unobtrusive. Retail price is \$42.50.

BARCUS-BERRY KRASH PAD

Besides making the 2050 trigger/pickup, Barcus-Berry also manufactures a drum trigger pad. The *Krash Pad* measures approximately 7 1/2" x 5 1/2", and has a very slim profile, being only 1" high. It has a rectangular, opaque acrylic base on which is mounted a slightly smaller rubber surface. The rubber pad actually consists of a hard top layer and a soft bottom layer, with an aluminum plate sandwiched in between. Unlike a lot of pads, the entire surface is "live." A 1/4" jack is on one end of the *Krash Pad*, and underneath is an aluminum bracket with nylon screws. The bracket will fit any L-arm type holder, or will allow the mounting of the *Krash Pad* on an acoustic drum rim.

The playing surface is exactly like a hard rubber practice pad: It has a lot of bounce, and is really not that uncomfortable. The pad is also dynamically sensitive. I'm not too keen on the mounting bracket. It works okay on a drum rim, but doesn't really stay too stable on an L-arm unless it's mounted perfectly flat.

In general, the *Krash Pad* does its job well, and is an alternative to using larger pads, due to its compact size. Barcus-Berry also says that smoke bombs and other pyrotechnics can be triggered via the *Krash Pad*. While I haven't exactly tried that, I'll take their word for it. The *Krash Pad* retails at \$83.50. For more information, write to Barcus-Berry at 5381 Production Drive, Huntington Beach, California 92649.



C-DUCER A.P.T.

My September '85 column reviewed C-T Audio Systems' *C-Ducer* tape transducer microphones for drums. *C-Ducer* also has a trigger system available utilizing the same concept of internally-mounted contact pickups.

The *A.P.T.* (*Acoustic Percussion Trigger*) is available in either a five-channel or a two-channel format. A separate control unit interfaces the tape mic's with drum brains, drum machines, and audio mixing boards. Each channel on the control box contains two 1/4" trigger output jacks, an XLR balanced audio output jack, a 1/4" unbalanced audio output jack, a 1/4" *C-Ducer* trigger input, a trigger LED indicator, A & B output level controls, and a Threshold Adjust knob. Underneath the unit are separate trim pots to adjust audio output levels for each channel (rather inconvenient placement, in my opinion).

Trigger Output A is designed to trigger drum brains usually triggered by pads. Trigger Output B is for triggering drum machines (which need pulsed inputs). Besides using the *A.P.T.* to trigger one or both of these types of electronic units, it can also be used for miking your acoustic drums simultaneously, by sending separate lines out to the mixing board. The various acoustic and electronic sounds can be combined and layered, giving some really big sounds, as well as making the *A.P.T.* an incredibly versatile system.

Flexible *C-Ducer* tape transducer mic's are included with the unit. Each mic' is a contact electret 8" long, 5/8" wide, and approximately a millimeter thick. The mic' is sandwiched between two layers of flexible plastic, enabling it to conform to the contours of a drum shell. (The mic' is designed for internal shell placement.) The entire length of the mic' is sensitive. (Many transducers have one single "hot

spot.)

There are two ways to mount the trigger mic's. For permanent mounting, each mic strip has double-sided adhesive tape to affix it to the drum shell. For flexible mounting and experimentation, the mic can be suspended inside the shell by using rubber bands attached to the internal drum-lug mounting screws. If the *C-Ducer* is placed close to the batter head, there is a sharper attack. Placing it further down the shell gives more resonance (due to the air movement). When using the mic's as triggers, I found it best to have them as close to the playing head as possible, with the sensitivity set low. However, if you want to use *C-Ducers* as combination drum mic's/triggers, trial-and-error is the only way to find the optimum placement. You'll also need to experiment with trigger sensitivity in order to compensate for your playing force.

The low mass of the *C-Ducers* allows them to have a minimal effect on the acoustic tone of a drum. Also, since they're mounted internally, there's no danger of accidentally striking the pickup and damaging it. Besides triggering from an acoustic drumkit, the *A.P.T.* and *C-Ducers* will also work nicely on congas, bongos, timbales—whatever. I came away pretty impressed with the versatility and overall capabilities of the *A.P.T.* The trigger sound is clean, and the miked audio sound is superb. The five-channel version retails at \$699; the two-channel system retails at \$499. You can contact C-T Audio Systems at 3050 S.W. 14th Place, Suite 3, Boynton Beach, Florida 33435.



DAUZ DRUM PADS

Since the advent of electronic drumpads, many shapes and sizes have appeared on the market. Pad design is basically cosmetic, since the essential component—the pickup—is quite small. In fact, the size of the pad itself has nothing to do with its functionality.

Dan Dauz is producing trigger pads that are only 6" in diameter and 2" high, allowing for a very compact setup. I've been testing the Dauz pads for a while—

from their birth to their present design. What began as a flat-based, shellless pad with a thick rubber surface has now become a black, rounded-shell pad with a fitted rubber surface.

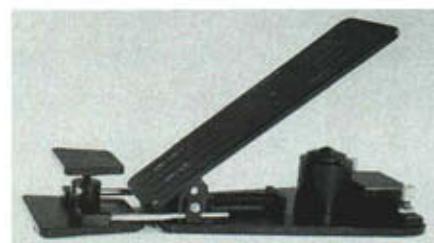
Dauz pads utilize a three-point shock-mount spring system to afford some "give" to the playing surface. The pad is also isolated from external (false) triggering or crosstalk. The base of the pad has an adjustable dome-top clamp that will accept either L-arms or 7/8" tubing. A 1/4" output jack is on the side of the pad's shell. The base is detachable if you want to modify the pickup.

The pads are very compact, which is what I like most about them. Using various adapters and tom-tom arms, I was able to easily mount a four-pad cluster resembling a drumkit configuration on one stand. The total space taken up was approximately that of a floor tom. I used the "drumkit setup" of pads in a live situation to trigger an *SDS1000*, and in the studio to trigger a Linn 9000 and an E-Mu *SP12*. The pads were compatible with all those various systems, and everyone was raving about the portability and minimal space requirements needed. (Hmmm...I wonder if I could mount 'em on a marching harness for on-stage mobility....)

The acoustical impact sound is softer than that produced on a Simmons pad, and less likely to bleed into mic's when recording or playing live. The feel is quite natural, with good stick rebound. The pads are well constructed, and I like the "space-age" look.

If you don't want to use a full pad setup, the Dauz pads will easily fit into the little nooks and crannies of your acoustic kit setup, where larger pads won't. The Dauz pads were definitely an answer to some of my setup problems, and maybe they'll provide a solution for you, too. Retail price is \$89.95 each.

Dan Dauz also manufactures a bass drum trigger, and custom-designs triggering setups and systems. Write him at Dauz Designs, 4715 W. El Segundo Boulevard, #B, Hawthorne, California 90250.



E-PEDAL

The Engineered Percussion *E-Pedal* is a bass drum trigger pedal that resembles a guitarist's volume pedal. It has a large, black, hinged footboard mounted on a 9 1/2" black anodized aluminum base plate. A single compression die spring is used for pedal tension. The spring slides along the

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An advertisement for Pro-Mark drumsticks. It features a black and white photograph of a drummer in action. To the right of the photo is a close-up of a Pro-Mark drumstick with a wooden shaft and a black tip. The text "I got the gig!" is written in a stylized font above the stick. The Pro-Mark logo and the tagline "The World's Class Drumsicks" are also present.

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base plate, and is tensionable at the back of the pedal via a drumkey. A 1/2" stainless steel rod is used as a "plunger" to activate the spring movement.

There is no beater or strap on the *E-Pedal*; the bottom of the footboard itself makes direct contact with a trigger housing that is also mounted onto the base plate. The housing is a 2 1/2" aluminum column, which is dust-proof and moisture-proof. Atop the column is a hard rubber cap, shaped like a tiny cymbal. This is what the footboard detonates. The trigger is adjustable for sensitivity via allen screws, and is supported inside by three springs to prevent double-triggering. In front of the housing is a small box with two 1/4" output jacks. (Two *E-Pedals* can be linked together if desired.) There are two knurled-knob spike spurs with locknuts on the base plate, and underneath the plate are strips of molded *Velcro* for superb gripping on a carpeted playing surface.

The *E-Pedal* also has a fully adjustable/detachable heel-support platform. It is a separate piece, connected to the pedal via sliding rods. The heel platform can be adjusted for height and distance, or can simply be removed altogether. The connecting rods adjust for forward/back distance, while the heel plate itself swivels like a piano stool to adjust height, and is then locked with a drumkey. In order to adjust the pedal's spring tension, the platform must be entirely removed. The heel plate is flat, while the footboard has a pre-set 45° angle (which can't be adjusted).

The *E-Pedal* is quick, light, smooth, and responsive—although its feel is slightly different than that of a conventional bass drum pedal and does take some getting used to. For more control, I personally found it better to play heel-down, but I found myself lifting my heel in order to play doubles.

After playing the pedal for a while, I

adapted to its nuances rather easily. The *E-Pedal* works well, and I like the "high-tech" appearance. One more plus is that since there is no beater to allow room for, the *E-Pedal* can be placed closer to your regular bass drum pedal, if you're using it in conjunction with an acoustic setup. Retail price is \$269.00 (with an unconditional guarantee). Engineered Percussion may be contacted at 23206 S. Normandie Avenue, #7, Torrance, California 90502.

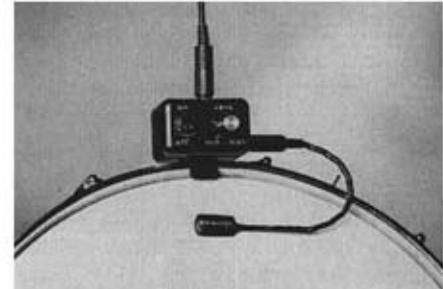


PHI-TRAC TRIGGERS

Phi Technologies offers *Phi-Trac* drum triggers utilizing piezo-electric transducers. The triggers have 3/4" round black anodized aluminum casings, and use a special butyl-rubber double-sided adhesive. Attached to the trigger cable is a 1/4" female connector with a small adhesive-backed plastic clip fitted around it, allowing the jack to be fixed to the drumshell. where it's out of the way. The *Phi-Trac* triggers can be mounted on either the drumhead or shell, and will work on any type of drum.

Being aluminum-encased, the triggers are pretty durable: One of them took a direct shot from a drumstick and suffered

no apparent damage. The *Phi-Tracs* have good sensitivity, while double-triggering is kept at a minimum. The neoprene adhesive has a high tack and really keeps the trigger on the head. (In fact, it's pretty permanent.) The adhesive squares are also available separately, as are the connector clamps. A set of six *Phi-Trac* triggers retails at \$199.50 (which works out to about \$33.50 each when purchased separately). I have no complaints with the *Phi-Tracs*; they are lightweight and reliable. Write Phi Technologies at 4605 North Stiles, Oklahoma City, Oklahoma 73105.



TECHTONICS SDT BEATMASTER

Techtonics has two rim-mountable drum triggers available—one for standard rims (*SDT*), and one for bass drum hoops (*BDT*). The *Beatmaster SDT* is a two-piece unit: the pickup and a small control box. The control box measures 1 1/2" high by 2" long by 1 1/2" deep, and has a spring clip similar to the clip found on many external drum mufflers. The clip allows the box to attach right to the drum rim. The pickup is 1" in diameter, and plugs into the control box via a 3.5mm connector on the end of a 6" cable.

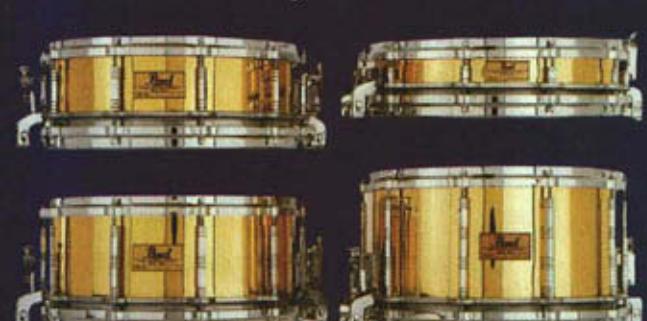
The *Beatmaster* triggers are unique in that velocity sensitivity is controllable at the drum, using a rotary knob on the rim-mounted control box. The box also contains a toggle switch that allows the user to turn the trigger on and off at will, while

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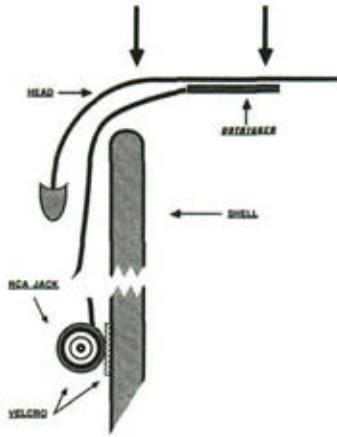
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playing. However, the control box does not have to be used. Adapting the jack on the pickup to a 1/4" jack will enable it to plug directly into any sound module.

There are several ways to mount the pickup onto the drum. Duct tape can be used; it's removable and won't damage the pickup. Other options (with more permanency) are silicone adhesive or hobbyist's glue. Most drummers will want to mount the pickup directly on the drumhead, but an alternative idea might be to fix it onto the rim. By using the trigger's sensitivity control, the rim can then become a separate triggering device. The possibility of double-triggering is nonexistent, as long as the sensitivity control is properly adjusted.

The only problem I found with the *SDT* trigger was that the control box sometimes got in the way of my playing (especially if mounted on 8" or 10" toms, or near where I play side-stick rimshots on the snare). I suppose the trigger cable could be lengthened so that the box is out of the way, but it would then be off of the drum rim as well—defeating the purpose of having the box there in the first place. I love the idea of being able to turn the trigger on and off while playing. This is an especially helpful feature if you're not using a sound technician out front who can insert or take away your triggered sounds as needed in songs. The onboard sensitivity also helped greatly for altering trigger dynamics from song to song. The Techtonics trigger may be a bit more fragile than some of the others, but the pickup can be replaced for about \$10, if the need ever arises. (*I haven't had any problems yet.*) The *BDT* is exactly the same as the *SDT* except for the different mount, and both retail for \$34.95. Contact Techtonics at 719 Longfellow Avenue, Hermosa Beach, California 90254.



LITTLE MISS MOFFAT
OUTRIGGER

The Moffat *Outrigger* triggers are a bit different from the others in that they are primarily designed to be installed underneath the batter head. The pickup itself is extremely thin and is approximately the

size of a dime. Connected to it is a 1 1/2" long, flat, flexible conductor, which exits the drum between the head and shell. This is permanently connected to a short, standard cable that has a female RCA jack. Another longer cable mates with the RCA jack and has a 1/4" plug at its other end for hookup to the sound module. *Velcro* is used at various points to hold the cable and RCA jack to the drumshell, keeping those pieces out of the way and providing some degree of strain relief.

The *Outrigger* has to be installed as close to the shell as possible, for obvious reasons. This is a bit more of a hassle than the other trigger models, since it involves removing the bottom head first (for planning the position), then removing the top head for installation. (Single-headed drums aren't as difficult to rig.) In order to prevent double triggering, the *Outrigger* must be glued securely to the head. A silicone adhesive is recommended by the manufacturer. It bonds extremely well, yet the pickup can be removed, if necessary, with a razor blade. Drying time is the disadvantage here; it takes one to two hours for the silicone to fully cement itself. Thin foam tape also worked for me on certain drums.

The *Outrigger* is very small and lightweight, so it does not dampen the drum sound. Since it's inside the drum, the pickup is well protected and less prone to damage. The only problem I can foresee would be that if the glue hasn't cured properly, the trigger could fall off inside the drum during a gig. Also, if you're a constant drumhead-breaker, you may not want to go with internal head mounting.

Besides their application on acoustic drums, the *Outriggers*' compact size allows them to also be mounted inside removable-head practice pads, thus creating your own drum trigger pads. For those who insist on external mounting, Moffat also makes the *Outrigger-X*, which mounts onto the top of a drumhead. It is identical to the internal model, except that it has a longer flat conductor that will go right over the drum rim quite neatly.

Cosmetically, the *Outriggers* are appealing, since all wires are kept out of the way. Routing the cable out of the shell is done in an ingenious manner. Sonically, there are no wires to rattle inside the drum. Essentially, when the *Outriggers* are silicone-glued, they become "part of the drumhead." They're quite "hot" and, in fact, could be used in small sound reinforcement situations as well, for extra attack. If you don't mind taking a little time to install them, the *Outriggers* work out pretty well. Retail price is \$29.95. Little Miss Moffat Electronics can be contacted at P.O. Box 315, Antioch, Tennessee 37013.

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